

WHAT IS CLAIMED IS:

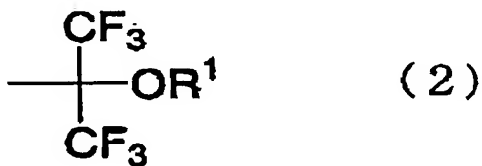
- 1 1. A fluorine-containing allyl ether compound represented by the formula  
2 1,



- 3  
4 wherein R represents an organic group comprising at least one  
5 fluorine atom and an alicyclic structure.

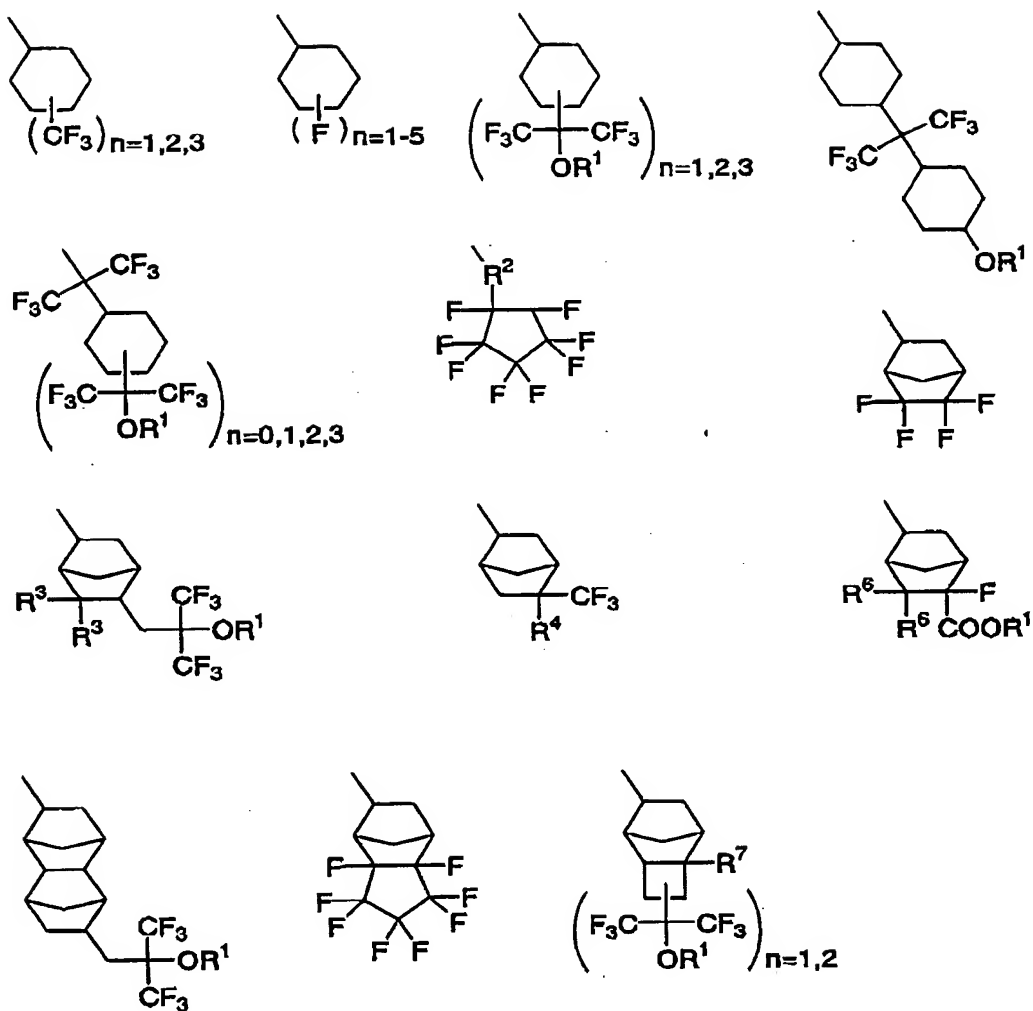
- 1 2. A fluorine-containing allyl ether compound according to claim 1,  
2 wherein the alicyclic structure comprises a cyclohexane structure or  
3 bicyclo[2.2.1]heptane structure.

- 1 3. A fluorine-containing allyl ether compound according to claim 1,  
2 wherein the organic group R comprises a hexafluoroisopropanol group or unit  
3 derived therefrom, which is represented by the formula 2,



- 4  
5 wherein R<sup>1</sup> represents a hydrogen or alkyl group having a carbon  
6 atom number of from 1 to 6 and optionally contains a heteroatom.

- 1 4. A fluorine-containing allyl ether compound according to claim 1,  
2 wherein the organic group R is represented by one of the following formulas,



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4 wherein  $R^1$  is H or a  $C_1$ - $C_6$  alkyl group and optionally contains a  
5 heteroatom;  
6  $R^2$  is a  $C_0$ - $C_5$  alkyl group;  
7  $R^3$  is H or F;  $R^4$  is  $CF_3$ , OH,  $CO_2H$ ,  $CO_2R^5$ , or  $OCOR^5$  where  $R^5$  is a  
8  $C_1$ - $C_6$  alkyl group;  
9  $R^6$  is H or F; and  
10  $R^7$  is H or  $C_1$ - $C_5$  alkyl group.
- 1 5. A fluorine-containing copolymer comprising:

- 2 a first unit derived from a fluorine-containing allyl ether represented  
3 by the formula 1; and  
4 a second unit derived from a vinyl monomer,



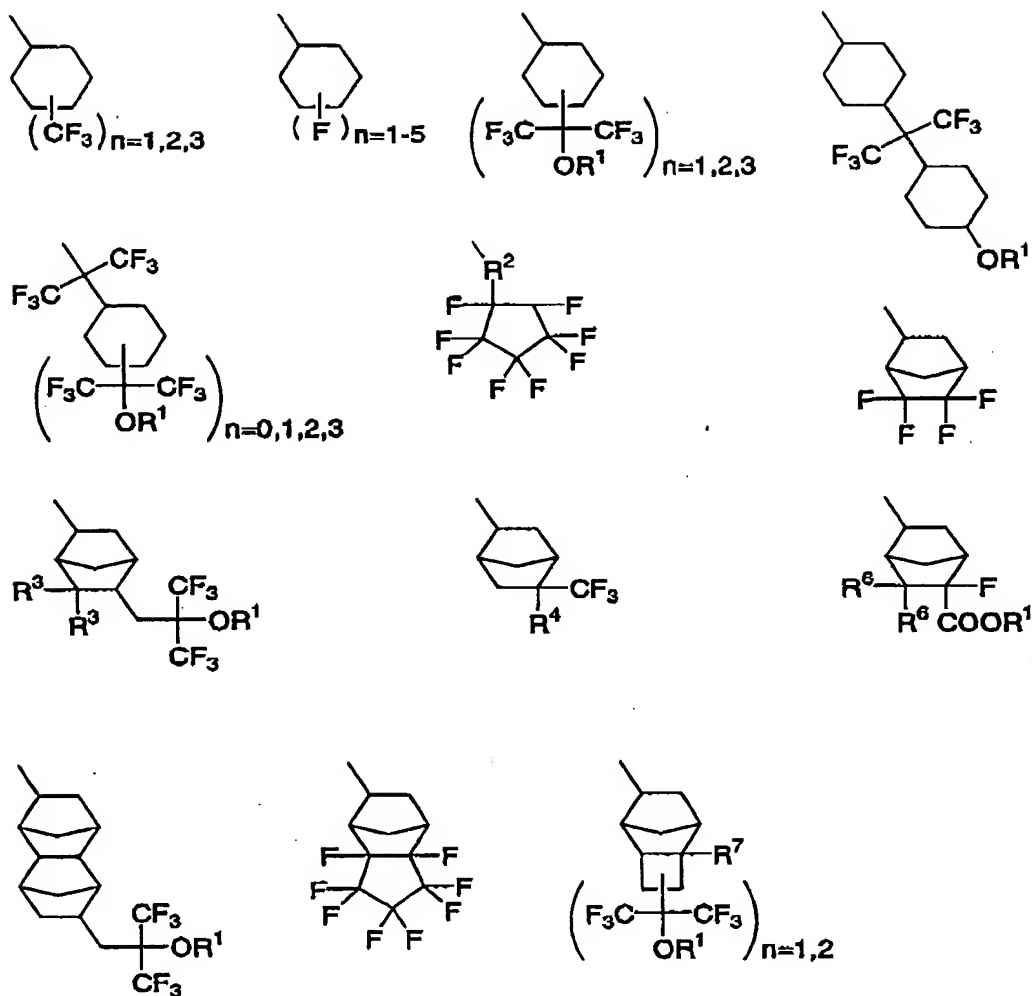
- 5  
6 wherein R represents an organic group comprising at least one  
7 fluorine atom and an alicyclic structure.

- 1 6. A fluorine-containing copolymer according to claim 5, wherein the  
2 vinyl monomer is an  $\alpha$ -trifluoromethyl acrylic ester.

- 1 7. A fluorine-containing copolymer according to claim 5, wherein the  
2 vinyl monomer is an acrylic ester..

- 1 8. A fluorine-containing copolymer according to claim 5, further  
2 comprising a third unit derived from a monomer containing a norbornene  
3 structure.

- 1 9. A fluorine-containing copolymer according to claim 5, wherein the  
2 organic group R is represented by one of the following formulas,



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wherein  $\text{R}^1$  is H or a  $\text{C}_1\text{-C}_6$  alkyl group and optionally contains a heteroatom;

$\text{R}^2$  is a  $\text{C}_0\text{-C}_6$  alkyl group;

$\text{R}^3$  is H or F;  $\text{R}^4$  is  $\text{CF}_3$ , OH,  $\text{CO}_2\text{H}$ ,  $\text{CO}_2\text{R}^5$ , or  $\text{OCOR}^5$  where  $\text{R}^5$  is a

$\text{C}_1\text{-C}_6$  alkyl group;

$\text{R}^6$  is H or F; and

$\text{R}^7$  is H or  $\text{C}_1\text{-C}_5$  alkyl group.

1 10. A resist composition comprising a fluorine-containing copolymer  
2 according to claim 5.

1 11. An anti-reflection film material comprising a fluorine-containing  
2 copolymer according to claim 5.